METHOD FOR PREVENTING INADVERTENT DATA ENTRY IN A WEB PAGE

COPYRIGHT NOTICE

[0001]   A portion of the disclosure of this patent document contains material, which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

FIELD OF THE INVENTION

[0002]   The present application relates generally to use of a computer with the Internet and, more particularly, a system and method for preventing unintended entry or submission of data via a Web browser or the like.

BACKGROUND OF THE INVENTION

[0003]   The Internet brings a worldwide network of computers together by connecting server computers with client computers. The connection is provided through a communications protocol known as the Transmission Control Protocol/Internet Protocol (TCP/IP). TCP/IP is essentially a suite of protocols that provides an infrastructure for the Internet.

[0004]   A World Wide Web (WWW) server computer is a computer with associated software that sends and receives data over the Internet to and from client computers having a browser capable of interpreting the data. Examples of such a browser include, Netscape® Navigator® and Microsoft® Internet Explorer. Conventionally, the data is transmitted to the browser using the Hypertext Transfer Protocol (HTTP), which defines a high-level message passing protocol for sending and receiving packets of information between diverse applications. Details of HTTP can be found in Hypertext Transfer Protocol--HTTP 1.1, Request for Comments (RFC) 2616, June, 1999, which is incorporated herein by reference in its entirety.

[0005]   Each HTTP message follows a specific layout, which includes a header containing information specific to a request or response. Further, each HTTP request message

contains a universal resource identifier (a "URI"), which specifies to which network resource the request is to be applied. A URI is either a Uniform Resource Locator ("URL") or Uniform Resource Name ("URN"), or any other formatted string that identifies a network resource. The URI contained in a request message, in effect, identifies the destination machine for a message. URLs, as an example of URIs, are discussed in detail in T. Berners-Lee, et al., Uniform Resource Locators (URL), RFC 1738, CERN, Xerox PARC, Univ. of Minn., December, 1994, which is incorporated herein by reference.

[0006]   The data transmitted to the browser is referred to as a Web page and generally contains a Hypertext Markup Language (HTML) document. HTML is a tag-based language used to define the format and content of a Web page, and is described in greater detail in HTML 4.01 Specification, W3C Recommendation, 24 December 1999, which is incorported herein by reference in its entirety. A Web page may also contain other programming languages, for example, eXtensible Markup Language (XML), JavaScript, and others that extend the functionality of the Web page beyond the limits of HTML.

[0007]   The client computer may send data over the Internet to the Web Server running a Common Gateway Interface (CGI Script) capable of receiving and interpreting the data. CGI is a well-known protocol that provides a way in which the scripts are run. For example, with a browser running on a client computer having an active Web page, a set of HTML FORM tags can be used to create fields in a Web page, which accepts input from the user for transmission to the Web server. The ACTION attribute of a FORM tag defines the URL that will accept the transmitted data. The URL contains a standard IP address. Associated with the set of FORM tags are two method attributes. These attributes define how data is sent back to the Web server identified by the ACTION attribute. A POST method sends the data back to the Web server separately from the URL and a GET method appends the data to the end of the URL. Also associated with the set of FORM tags is a SUBMIT element which displays a push button in the browser for sending the data to the Web server for processing. The processing of the data occurs at the Web server typically through a CGI Script.

[0008]   With the growing popularity of the Internet and the WWW, businesses and financial institutions have recognized that the Internet provides a new way to boost both sales and efficiency over conventional models. In particular, greater efficiencies can be achieved by allowing customers (i.e., Web users) to interact directly with the merchants' and institutions' order entry/transaction application software (herein "vendor application

software"). This eliminates the need for costly stores and branches, and eliminates many of the tasks that cashiers, sales personnel and sales representatives must now perform.

[0009]   However, there are problems associated with allowing web users to interact directly with vendor software applications. One such problem is that Web users often become impatient waiting for the vendor application software to process and respond to requests. Delays in processing may cause Web users to click a "submit" button on a particular web page multiple times, which disadvantageously restarts the process or resubmits the request. As a result, Web users may find that they have inadvertently purchased an item several times, or may have initiated several financial transactions where only one was intended. As a result, merchants and institutions must manually correct such inadvertent requests, which disadvantageously increases the cost of Web transactions, frustrate Web users and reduces the likelihood of repeat Web-based business.

[00010]   One way to manage this problem is to create a custom interface that identifies and attempts to correct and/or prevent inadvertent submissions. However, this solution requires additional server-side processing for each page, which may slow the processing of the data and make the user experience cumbersome through additional confirmation prompts. In addition, this programming increases the cost of developing software for use in web transactions.

[00011]   Therefore, there is a need for a simple, cost-effective method of preventing inadvertent submissions of data requests to Web sites and for preventing Web users from entering data at inappropriate times during their interaction with the Web server.

[00012]   The present invention is directed to solving the above problem, as well as other needs.

SUMMARY OF THE INVENTION

[00013]   The present invention addresses the needs identified above in that it provides a method for preventing inadvertent entries on a web page, without requiring additional sever-side processing.

[00014]   A method and apparatus for preventing inadvertent entries on a Web page or the like. An absolutely positioned "membrane" style is defined that covers an entire Web page at a higher z-index than other sheets (layers) in the Web page. A division of the Web page is associated with the "membrane" style. The style is initially hidden, meaning that the sheets with lower z-index numbers can be accessed. When the user submits the form